

AMENDMENT AND RESPONSE TO OFFICE ACTION

Amendment

In the Claims

Claims 1-94. (cancelled)

95. (Currently amended) A blown or cast free-standing film comprising a polyhydroxyalkanoate (PHA), wherein the PHA has a Mw greater than 420,000 and wherein the film is made from a pellet composition comprising the PHA and a thermal stabilizer, wherein the draw ratio of the film is between about 2 and 7.

96. (Previously presented) The film of claim 95, wherein the film is a blown film.

97. (Canceled)

98. (Previously presented) The film of claim 96, wherein the film has a percent elongation at break greater than 65%.

99. (Previously presented) The film of claim 96, wherein the film has a percent elongation at break greater than 75%.

100. (Previously presented) The film of claim 96, wherein the film has a tensile strength at break greater than 50 Mpa.

101. (Previously presented) The film of claim 96, wherein the tensile strength at break is greater than 75 Mpa.

102. (Currently amended) A method of producing a blown or cast free-standing film, comprising melting a pellet composition comprising a PHA and a thermal stabilizer, wherein the

AMENDMENT AND RESPONSE TO OFFICE ACTION

PHA in the film has a molecular weight greater than 420,000, and wherein the film has a draw ratio of between about 2 and 7.

103. (Previously presented) The method of claim 102 wherein the thermal stabilizer is an organophosphorous compound having the structural formula:



where R' is R or OH, and R is a branched or unbranched saturated C1-C30 group, a branched or unbranched unsaturated C2-C30 group, a C 6-C30 aromatic group, or a saturated or unsaturated C6-C30 cycloaliphatic group.

104. (Previously presented) The method of claim 102, wherein the film is produced by a continuous process.

105. (Previously presented) The method of claim 102, wherein the melt is formed into a film by film blowing.

106. (Previously presented) The method of claim 102, wherein the PHA in the pellet has a Mw greater than 470,000, and wherein the PHA in the film has a Mw greater than 420,000 Daltons.

107. (Previously presented) The method of claim 103, wherein the organophosphorous compound further contains one or more O, N, or S atoms in the alkyl chains.

AMENDMENT AND RESPONSE TO OFFICE ACTION

108. (Previously presented) The method of claim 103 wherein the organophosphorous compound is substituted with one or more hydroxyl, halo, carboxylic acid or ester, cyano, aryl, amino, hydroxylamino, mono-, di-, or trialkyl amino, or phosphonic acid groups.

109. (Previously presented) The method of claim 103, wherein the organophosphorous compound is selected from the group consisting of cyclohexylphosphonic acid, 1-cyclohexenylphosphonic acid, 1-hydroxycyclohexenylphosphonic acid, 1-hexanephosphonic acid, 1-hydroxyethylidene-1,1-diphosphonic acid, dicyclohexylphosphonic acid, and 2,4,4-(trimethylpentyl)cyclohexylphosphonic acid.

110. (Previously presented) The method of claim 102 wherein the pellet composition further comprises an oxide, hydroxide, or carboxylic acid salt of a metal from Groups I to V of the Periodic Table.

111. (Previously presented) The method of claim 102, wherein the pellet composition further comprises calcium stearate, magnesium stearate, zinc stearate, or zinc oxide.

112. (Previously presented) The method of claim 103, wherein the organophosphorous compound is a diphosphonic acid.

113. (Previously presented) The method of claim 112, wherein the diphosphonic acid is hydroxyethylidene-1,1-diphosphonic acid.

114. (Previously presented) The method of claim 102 wherein the pellet composition further comprises a fatty acid salt of a metal from Groups I to V of the Periodic table.

AMENDMENT AND RESPONSE TO OFFICE ACTION

115. (Previously presented) The method of claim 102 wherein the pellet composition further comprises a weak organic base selected from fatty acid amides.

116-124. (cancelled)

125. (Previously presented) The blow or cast free-standing film of claim 95 wherein the pellet composition further comprises a material selected from the group consisting of boron nitride and acetylbutylcitrate.

126. (Previously presented) The method of claim 103 wherein the pellet composition further comprises a material selected from the group consisting of boron nitride and acetylbutylcitrate.

127. (Previously presented) The method of claim 117 wherein the PHA and thermal stabilizer are combined with a material selected from the group consisting of boron nitride and acetylbutylcitrate.

128. (Previously presented) The film of claim 95, wherein the thermal stabilizer is an organophosphorous compound having the structural formula:



where R' is R or OH, and R is a branched or unbranched saturated C1-C30 group, a branched or unbranched unsaturated C2-C30 group, a C6-C30 aromatic group, or a saturated or unsaturated C6-C30 cycloaliphatic group.

AMENDMENT AND RESPONSE TO OFFICE ACTION

129. (Previously presented) The film of claim 128, wherein the organophosphorous compound further contains one or more O, N, or S atoms in the alkyl chains.

130. (Previously presented) The film of claim 128, wherein the organophosphorous compound is substituted with one or more hydroxyl, halo, carboxylic acid or ester, cyano, aryl, amino, hydroxylamino, mono-, di-, or trialkyl amino, or phosphonic acid groups.

131. (Previously presented) The film of claim 102, wherein the organophosphorous compound is selected from the group consisting of cyclohexylphosphonic acid, 1-cyclohexenylphosphonic acid, 1-hydroxycyclohexenylphosphonic acid, 1-hexanephosphonic acid, 1-hydroxyethylidene-1,1-diphosphonic acid, dicyclohexylphosphonic acid, and 2,4,4-(trimethylpentyl)cyclohexylphosphonic acid.

132. (Previously presented) The film of claim 95, wherein the pellet composition further comprises an oxide, hydroxide, or carboxylic acid salt of a metal from Groups I to V of the Periodic Table.

133. (Previously presented) The film of claim 95, wherein the pellet composition further comprises calcium stearate, magnesium stearate, zinc stearate, or zinc oxide.

134. (Previously presented) The film of claim 95 wherein the film is oriented uniaxially.

135. (Previously presented) The film of claim 95 wherein the film is oriented biaxially.